



# **YFM7FGPW**

## **SERVICE MANUAL**

---

EBS00001

**YFM7FGPW  
SERVICE MANUAL  
©2006 by Yamaha Motor Corporation, U.S.A.  
First Edition, May 2006  
All rights reserved.  
Any reproduction or unauthorized use  
without the written permission of  
Yamaha Motor Corporation, U.S.A.  
is expressly prohibited.  
Printed in U.S.A.  
LIT-11616-20-11**

## NOTICE

This manual was produced by the Yamaha Motor Company primarily for use by Yamaha dealers and their qualified mechanics. It is not possible to include all the knowledge of a mechanic in one manual, so it is assumed that anyone who uses this book to perform maintenance and repairs on Yamaha vehicle has a basic understanding of the mechanical ideas and the procedures of vehicle repair. Repairs attempted by anyone without this knowledge are likely to render the vehicle unsafe and unfit for use.

This model has been designed and manufactured to perform within certain specifications in regard to performance and emissions. Proper service with the correct tools is necessary to ensure that the vehicle will operate as designed. If there is any question about a service procedure, it is imperative that you contact a Yamaha dealer for any service information changes that apply to this model. This policy is intended to provide the customer with the most satisfaction from his vehicle and to conform to federal environmental quality objectives.

Yamaha Motor Company, Ltd. is continually striving to improve all its models. Modifications and significant changes in specifications or procedures will be forwarded to all authorized Yamaha dealers and will appear in future editions of this manual where applicable.

### NOTE:

- This Service Manual contains information regarding periodic maintenance to the emission control system. Please read this material carefully.
- Designs and specifications are subject to change without notice.

## IMPORTANT INFORMATION

Particularly important information is distinguished in this manual by the following notations.



The Safety Alert Symbol means ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!



### WARNING

Failure to follow WARNING instructions could result in severe injury or death to the vehicle operator, a bystander or a person checking or repairing the vehicle.

### CAUTION:

A CAUTION indicates special precautions that must be taken to avoid damage to the vehicle.

### NOTE:

A NOTE provides key information to make procedures easier or clearer.

# HOW TO USE THIS MANUAL

## MANUAL ORGANIZATION

This manual consists of chapters for the main categories of subjects. (See “symbols”)

1st title ①: This is the title of the chapter with its symbol in the upper right corner of each page.

2nd title ②: This title indicates the section of the chapter and only appears on the first page of each section. It is located in the upper left corner of the page.

3rd title ③: This title indicates a sub-section that is followed by step-by-step procedures accompanied by corresponding illustrations.

## EXPLODED DIAGRAMS

To help identify parts and clarify procedure steps, there are exploded diagrams at the start of each removal and disassembly section.

1. An easy-to-see exploded diagram ④ is provided for removal and disassembly jobs.
2. Numbers ⑤ are given in the order of the jobs in the exploded diagram. A number that is enclosed by a circle indicates a disassembly step.
3. An explanation of jobs and notes is presented in an easy-to-read way by the use of symbol marks ⑥. The meanings of the symbol marks are given on the next page.
4. A job instruction chart ⑦ accompanies the exploded diagram, providing the order of jobs, names of parts, notes in jobs, etc.
5. For jobs requiring more information, the step-by-step format supplements ⑧ are given in addition to the exploded diagram and the job instruction chart.

②

CLUTCH

①

ENG

④

⑤

⑥

⑦

Order	Job/Part	Qty	Remarks
<b>Removing the clutch</b>			
	Primary sheave/secondary sheave		Remove the parts in the order listed. Refer to "PRIMARY AND SECONDARY SHEAVES".
1	Clutch housing assembly	1	
2	Gasket	1	
3	Dowel pin	2	Refer to "REMOVING THE CLUTCH" and "INSTALLING THE CLUTCH".
4	One-way clutch bearing	1	
5	Nut	1	
6	Clutch carrier assembly	1	For installation, reverse the removal procedure.

CLUTCH ENG

③

⑧

**REMOVING THE CLUTCH**

1. Remove:

- clutch housing assembly
- gasket
- dowel pins

**NOTE:**  
Working in crisscross pattern, loosen each bolt 1/4 of a turn. Remove them after all of them are loosened.

2. Straighten:

- punched portion of the nut ①

3. Remove:

- nut ①









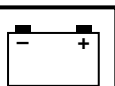
















**CAUTION:**  
The clutch carrier assembly nut has left-handed threads. To loosen the clutch carrier assembly nut turn it clockwise.

**NOTE:**  
Use a clutch holding tool ② to hold the clutch carrier assembly.

**Universal clutch holder**  
90890-04086, YM-91042

4 - 63

4 - 65

① GEN INFO 	② SPEC 	
③ CHK ADJ 	④ ENG 	
⑤ COOL 	⑥ FI 	
⑦ DRIV 	⑧ CHAS 	
⑨ ELEC 	⑩ TRBL SHTG 	
⑪ 	⑫ 	
⑬ 	⑭ 	
⑮ 	⑯ 	
⑰ 	⑱ 	
⑲ 	⑳ 	㉑ 
㉒ 	㉓ 	㉔ 
㉕ 	㉖ New	

EBS00006

## SYMBOLS

The following symbols are not relevant to every vehicle.

Symbols ① to ⑩ indicate the subject of each chapter.

- ① General information
- ② Specifications
- ③ Periodic checks and adjustments
- ④ Engine
- ⑤ Cooling system
- ⑥ Fuel injection system
- ⑦ Drive train
- ⑧ Chassis
- ⑨ Electrical
- ⑩ Troubleshooting

Symbols ⑪ to ⑱ indicate the following

- ⑪ Can be serviced with engine mounted
- ⑫ Filling fluid
- ⑬ Lubricant
- ⑭ Special tool
- ⑮ Torque
- ⑯ Wear limit, clearance
- ⑰ Engine speed
- ⑱ Electrical data ( $\Omega$ , V, A)











Symbols ⑲ to ㉔ in the exploded diagrams indicate the types of lubricants and lubrication points.

- ⑲ Apply engine oil
- ⑳ Apply gear oil
- ㉑ Apply molybdenum disulfide oil
- ㉒ Apply wheel bearing grease
- ㉓ Apply lithium-soap-based grease
- ㉔ Apply molybdenum disulfide grease

Symbols ㉕ to ㉖ in the exploded diagrams indicate where to apply a locking agent ㉕ and when to install a new part ㉖.

- ㉕ Apply the locking agent (LOCTITE®)
- ㉖ Replace

# TABLE OF CONTENTS

GENERAL INFORMATION		
	GEN INFO	<b>1</b>
SPECIFICATIONS		
	SPEC	<b>2</b>
PERIODIC CHECKS AND ADJUSTMENTS		
	CHK ADJ	<b>3</b>
ENGINE		
	ENG	<b>4</b>
COOLING SYSTEM		
	COOL	<b>5</b>
FUEL INJECTION SYSTEM		
	FI	<b>6</b>
DRIVE TRAIN		
	DRIV	<b>7</b>
CHASSIS		
	CHAS	<b>8</b>
ELECTRICAL		
	ELEC	<b>9</b>
TROUBLESHOOTING		
	TRBL SHTG	<b>10</b>

---

# CONTENTS

## CHAPTER 1 GENERAL INFORMATION

<b>VEHICLE IDENTIFICATION</b> .....	1-1
VEHICLE IDENTIFICATION NUMBER .....	1-1
MODEL LABEL.....	1-1
<b>FEATURES</b> .....	1-2
OUTLINE OF THE FI SYSTEM .....	1-2
FI SYSTEM.....	1-3
OUTLINE OF THE EPS (ELECTRIC POWER STEERING) SYSTEM.....	1-4
EPS (ELECTRIC POWER STEERING) SYSTEM BLOCK DIAGRAM .....	1-5
INSTRUMENT FUNCTIONS .....	1-6
<b>IMPORTANT INFORMATION</b> .....	1-9
PREPARATION FOR REMOVAL AND DISASSEMBLY.....	1-9
REPLACEMENT PARTS.....	1-9
GASKETS, OIL SEALS AND O-RINGS .....	1-9
LOCK WASHERS/PLATES AND COTTER PINS .....	1-10
BEARINGS AND OIL SEALS .....	1-10
CIRCLIPS .....	1-10
CHECKING THE CONNECTIONS.....	1-11
<b>SPECIAL TOOLS</b> .....	1-12

## CHAPTER 2 SPECIFICATIONS

<b>GENERAL SPECIFICATIONS</b> .....	2-1
<b>ENGINE SPECIFICATIONS</b> .....	2-5
<b>CHASSIS SPECIFICATIONS</b> .....	2-12
<b>ELECTRICAL SPECIFICATIONS</b> .....	2-14
<b>TIGHTENING TORQUES</b> .....	2-16
ENGINE TIGHTENING TORQUES.....	2-16
CHASSIS TIGHTENING TORQUES.....	2-19
<b>HOW TO USE THE CONVERSION TABLE</b> .....	2-22

---

<b>GENERAL TIGHTENING TORQUE SPECIFICATIONS.....</b>	<b>2-22</b>
<b>LUBRICATION POINTS AND LUBRICANT TYPES .....</b>	<b>2-23</b>
ENGINE.....	2-23
<b>COOLANT FLOW DIAGRAMS .....</b>	<b>2-25</b>
<b>OIL FLOW DIAGRAMS .....</b>	<b>2-26</b>
<b>CABLE ROUTING .....</b>	<b>2-28</b>

## **CHAPTER 3**

### **PERIODIC CHECKS AND ADJUSTMENTS**

<b>INTRODUCTION.....</b>	<b>3-1</b>
<b>PERIODIC MAINTENANCE CHART FOR THE EMISSION CONTROL SYSTEM .....</b>	<b>3-1</b>
<b>GENERAL MAINTENANCE AND LUBRICATION CHART .....</b>	<b>3-2</b>
<b>ENGINE SKID PLATES, SEAT, CARRIERS AND FENDERS .....</b>	<b>3-4</b>
ENGINE SKID PLATES.....	3-4
SEAT AND SIDE PANELS .....	3-5
FRONT CARRIER AND FRONT GUARD .....	3-6
FRONT FENDERS AND FRONT GRILL.....	3-8
REAR CARRIER AND REAR FENDER .....	3-9
<b>ELECTRICAL COMPONENTS TRAY .....</b>	<b>3-10</b>
ELECTRICAL COMPONENTS TRAY 1/2 .....	3-10
ELECTRICAL COMPONENTS TRAY 2/2 .....	3-12
<b>FOOTREST BOARDS .....</b>	<b>3-14</b>
<b>AIR FILTER CASE .....</b>	<b>3-15</b>



---

<b>ENGINE</b>	3-16
ADJUSTING THE VALVE CLEARANCE	3-16
ADJUSTING THE ENGINE IDLING SPEED	3-19
ADJUSTING THE THROTTLE LEVER FREE PLAY	3-20
ADJUSTING THE SPEED LIMITER	3-22
CHECKING THE SPARK PLUG	3-23
CHECKING THE IGNITION TIMING	3-24
MEASURING THE COMPRESSION PRESSURE	3-25
CHECKING THE ENGINE OIL LEVEL	3-28
CHANGING THE ENGINE OIL	3-29
CLEANING THE AIR FILTER ELEMENT	3-31
CHECKING THE THROTTLE BODY JOINT	3-33
CHECKING THE FUEL HOSE	3-34
CHECKING THE BREATHER HOSES	3-34
CHECKING THE COOLANT LEVEL	3-35
CHANGING THE COOLANT	3-35
CHECKING THE COOLING SYSTEM	3-39
CHECKING THE COOLANT TEMPERATURE WARNING LIGHT	3-40
CHECKING THE V-BELT	3-41
CHECKING THE EXHAUST SYSTEM	3-42
CLEANING THE SPARK ARRESTER	3-43
 <b>CHASSIS</b>	 3-44
ADJUSTING THE FRONT BRAKE	3-44
ADJUSTING THE REAR BRAKE	3-44
CHECKING THE BRAKE FLUID LEVEL	3-46
CHECKING THE FRONT BRAKE PADS	3-47
CHECKING THE REAR BRAKE PADS	3-48
CHECKING THE REAR BRAKE HOSE PROTECTORS	3-48
CHECKING THE BRAKE HOSES	3-49
BLEEDING THE HYDRAULIC BRAKE SYSTEM	3-49
ADJUSTING THE SELECT LEVER CONTROL CABLE AND SHIFT ROD	3-51
CHECKING THE FINAL GEAR OIL LEVEL	3-53
CHANGING THE FINAL GEAR OIL	3-53
CHECKING THE DIFFERENTIAL GEAR OIL LEVEL	3-55
CHANGING THE DIFFERENTIAL GEAR OIL	3-55
CHECKING THE CONSTANT VELOCITY JOINT DUST BOOTS	3-56
CHECKING THE STEERING SYSTEM	3-57
ADJUSTING THE TOE-IN	3-59
CHECKING THE FRONT AND REAR SHOCK ABSORBERS	3-60
ADJUSTING THE FRONT SHOCK ABSORBERS	3-61
ADJUSTING THE REAR SHOCK ABSORBERS	3-62
CHECKING THE TIRES	3-62
CHECKING THE WHEELS	3-65
CHECKING AND LUBRICATING THE CABLES	3-65
LUBRICATING THE LEVERS AND PEDALS	3-66

---

<b>ELECTRICAL SYSTEM.....</b>	<b>3-67</b>
CHECKING AND CHARGING THE BATTERY .....	3-67
CHECKING THE FUSES .....	3-73
ADJUSTING THE HEADLIGHT BEAMS.....	3-76
REPLACING THE HEADLIGHT BULBS .....	3-76

## CHAPTER 4

### ENGINE

<b>ENGINE REMOVAL .....</b>	<b>4-1</b>
AIR DUCTS, MUFFLER AND EXHAUST PIPE .....	4-1
SELECT LEVER UNIT .....	4-3
LEADS, CABLES AND HOSES .....	4-4
ENGINE MOUNTING BOLTS .....	4-6
INSTALLING THE ENGINE.....	4-8
INSTALLING THE SELECT LEVER UNIT .....	4-9
 <b>CYLINDER HEAD.....</b>	 <b>4-10</b>
REMOVING THE CYLINDER HEAD.....	4-12
CHECKING THE CAMSHAFT SPROCKET .....	4-13
CHECKING THE TAPPET COVERS .....	4-13
CHECKING THE TIMING CHAIN TENSIONER.....	4-13
CHECKING THE CYLINDER HEAD .....	4-14
INSTALLING THE CYLINDER HEAD .....	4-15
 <b>ROCKER ARMS AND CAMSHAFT .....</b>	 <b>4-18</b>
REMOVING THE ROCKER ARMS AND CAMSHAFT.....	4-20
CHECKING THE CAMSHAFT.....	4-20
CHECKING THE DECOMPRESSION SYSTEM.....	4-21
CHECKING THE ROCKER ARMS AND ROCKER ARM SHAFTS .....	4-21
INSTALLING THE CAMSHAFT AND ROCKER ARMS .....	4-22
 <b>VALVES AND VALVE SPRINGS.....</b>	 <b>4-25</b>
REMOVING THE VALVES AND VALVE SPRINGS .....	4-26
CHECKING THE VALVES AND VALVE SPRINGS .....	4-27
INSTALLING THE VALVES AND VALVE SPRINGS .....	4-31
 <b>CYLINDER AND PISTON.....</b>	 <b>4-34</b>
REMOVING THE PISTON .....	4-35
CHECKING THE CYLINDER AND PISTON .....	4-35
CHECKING THE PISTON RINGS.....	4-37
CHECKING THE PISTON PIN .....	4-38
INSTALLING THE PISTON AND CYLINDER .....	4-39